

UNDESCRIBED SPECIES OF
WESTERN NEARCTIC TIPULIDAE
(DIPTERA). IV.

Charles P. Alexander¹

The preceding part under this general title was published in THE GREAT BASIN NATURALIST, 18: 31 - 36; 1958. The species discussed at this time are from Arizona, California, Idaho, and Texas, taken by various collectors as acknowledged under the individual species. Through their appreciated interest I am permitted to retain the types in my personal collection.

Tipula (Trichotipula) hedgesi n. sp.

Size large (length of male about 25 mm., of which the abdomen comprises about 18); antennae short; mesonotal praescutum light brown with four poorly differentiated brownish gray stripes; wings brownish yellow, stigma and costal field pale brown; abdomen of both sexes very long; male hypopygium with the notch of tergite U-shaped, its margins with very abundant erect black setae; inner dististyle with beak bidentate, the outer basal lobe produced into a long erect horn; eighth sternite provided with long erect yellow setae, the posterior margin with a small median quadrate lobe.

Male.—Length about 23-27 mm.; wing 15-18 mm.; abdomen alone 17-20 mm.; antenna about 2.2-2.4 mm.

Female.—Length about 23-25 mm.; wing 15-16 mm.; abdomen alone 17-18 mm.

Frontal prolongation of head obscure yellow, including the slender nasus; palpi yellowish brown. Antennae short; basal three segments yellow, succeeding segments weakly bicolored, the scarcely enlarged bases darker than the outer half, outer segments uniformly brownish black; flagellar segments subequal in length to their longest verticils. Head above brownish gray; front, the conspicuous vertical tubercle and narrow posterior orbits clearer gray, genae and ventral surface light brown.

Pronotal scutum brownish gray, narrowly darkened medially, scutellum and pretergite light yellow. Mesonotal praescutum light brown, with four poorly differentiated more brownish gray stripes that are barely indicated by darker borders, the most evident being a median vitta; scutal lobes darkened, median region and remainder of mesonotum light yellow; pleurotergite yellowish white, confluent with the similarly colored pteropleurite, meron and metapleura; mesepisternum yellow, extensively patterned with brownish gray on the anepisternum and ventral sternopleurite; dorsopleural membrane yellow. Halteres with stem yellow, knob infuscated. Legs with coxae yellow, sparsely pruinose; trochanters obscure yellow; femora yellow, tips blackened; tibiae obscure brownish yellow, their tips and the tarsi brownish black to black; claws small, simple. Wings brown-

¹ Amherst, Massachusetts.

ish yellow, prearcular and costal fields, with the stigma, pale brown; veins brown. Macrotrichia in outer ends of cells R_5 , M_1 and 2nd M_2 . Venation: Cell 1st M_2 elongate, its inner end pointed; cell M_1 deep, its petiole from about one-half to subequal to m ; $m-cu$ on M_1 beyond the base.

Abdomen of both sexes very long, as shown by the measurements; tergites yellow, with a virtually continuous brown central stripe, on the proximal segments barely interrupted at extreme base; eighth tergite dull orange, trivittate with brownish black; hypopygium light brown above, more yellowed laterally; basal sternites reddish yellow, outer segments slightly more darkened. Ovipositor with cerci straight, relatively stout, their tips narrowly obtuse. Male hypopygium with the tergal notch narrowly U-shaped, the adjacent angles slightly produced; margin of notch with very abundant erect black spinoid setae, on lower face of lobes with dense areas of blackened spicules. Outer dististyle broad, apex obtuse; inner style with beak bidentate, formed of two long blackened points; outer basal lobe a long erect horn. Eighth sternite distinctive; posterior border gently emarginate, with a small quadrate median lobe; surface on either side of midline with very conspicuous long yellow setae.

Habitat.—Arizona (Pima County).

Holotype, ♂. Madera Canyon, Santa Rita Mountains, October 10, 1959 (William A. Hedges). *Allotopotype*, ♀, pinned in copula with the type. *Paratopotypes*, ♂ ♂ ♀ ♀.

This interesting fly is named for the collector, Mr. William A. Hedges, student of the Lepidoptera. The fly is quite distinct from *Tipula* (*Trichotipula*) *prolixa* Alexander, of this same general region, in the large size, very long abdomen, and especially the structure of the male hypopygium, including the tergite, inner dististyle and eighth sternite.

Tipula (*Yamatotipula*) *footeana* n. sp.

Allied to *albocaudata*; mesonotal praescutum yellowish gray with three darker stripes that are bordered by darker; antennal scape brownish black, pedicel orange, flagellum entirely black; flagellar segments strongly incised; pleura light gray; wings suffused, patterned with darker; abdominal tergites yellow medially, with two broad brownish black stripes; male hypopygium with the inner dististyle distinctive, especially the outer basal and intermediate lobes, the latter a curved slender spine; aedeagus before apex with a circlet of four strong spines.

Male.—Length about 13-15 mm.; wing 13-15 mm.; antenna about 4.7-5 mm.

Female.—Length about 15-16 mm.; wing 15-17 mm.; antenna about 3 mm.

Frontal prolongation of head light brown on sides, gray dorsally; nasus elongate, with long setae; palpi black. Antennae of male with scape brownish black, pedicel fulvous to brownish black, flagellum

black; flagellar segments rather strongly incised, beyond the first with outer lobe subequal in size to the basal swelling, verticils shorter than the segments; antennae of female shorter. Head brown, the front and broad orbits light gray; a group of long pale setae on lower part of head.

Pronotum gray, scutum patterned with brown, scutellum and pretergites variegated with yellow. Mesonotal praescutum yellowish gray, with three darker stripes that are bordered by darker to produce the effect of six darkened lines, the median vitta not or scarcely indicated; posterior sclerites of notum light gray, each scutal lobe with two brownish gray areas that are vaguely margined with darker, parascutella paler; pleurotergite variegated brownish gray and yellow, the latter color on the posterior end of the anapleurtergite and dorsal edge of the katapleurtergite. Pleura light gray, dorso-pleural region conspicuously light yellow; sclerites surrounding the root of the halteres light yellow. Halteres with stem reddish brown, brightest at base, knob dark brown. Legs with coxae light gray, with long conspicuous white setae; trochanters obscure yellow; femora brownish yellow, the tips passing into black; tibiae and tarsi brownish black; claws of male toothed. Wings rather strongly suffused, prearcular and costal fields more yellowed: stigma oval, dark brown, conspicuous; dusky seams along vein *R* in cell *R*, along *M* and *m-cu*, in cell *M*, and less evidently in outer radial field; oblitative areas before stigma and across base of cell *1st M*₂, separated by a darkening at fork of *Rs*; veins brownish black, paling to brown in the brightened fields. Venation: *Rs* long, from about 1.5 to 1.7 times *m-cu*; petiole of cell *M*₁ subequal to *m*; *m-cu* shortly beyond the short perpendicular base of *M*₄.

Abdominal tergites yellow medially, with very broad and conspicuous brownish black sublateral stripes that are much wider than the central ground area; lateral borders adjoining the dark stripes yellowed, paling through gray to white; sternites brownish yellow, darker laterally; seventh and succeeding segments black, sparsely pruinose; hypopygium dark, excepting the pale outer dististyle. Male hypopygium with the tergal lobes relatively broad, about twice as wide as the intervening notch, apical spicules abundant. Outer dististyle of moderate size, apex obtuse, setae small; inner dististyle distinctive, with three lobes or spines additional to the beak, the latter obtuse, at its base on outer face with six or seven long powerful setae; outer basal lobe stout, at apex with several appressed points or scales; intermediate lobe a strong sclerotized arm, broad at base, curved and very gradually narrowed into a long straight spine, the outer part with a series of about five strong setae; third lobe a pale flattened blade, its apex very obtuse. Aedeagus relatively slender, near apex with a circlet of four strong spines.

Habitat.—Idaho (Latah County).

Holotype, ♂, Robinson Lake, April 29, 1959 (H. Homan). *Allotopotype*, ♀, pinned with the type. *Paratopotypes*, ♂♂ ♀♀, with

the types, including material reared from pupa, emerged April 5-May 1, 1959.

I am pleased to dedicate this fly to Dr. Benjamin A. Foote, who reared the material while on the staff in Entomology at the University of Idaho. An account of the immature stages will be published by Dr. Foote. The similar species are *Tipula* (*Yamatotipula*) *albocaudata* Doane and *T.* (*Y.*) *colteri* Alexander, distinguished by the coloration of the body and antennae and, especially, by the structure of the male hypopygium, particularly the inner dististyle.

Tipula (*Hesperotipula*) *chumash* n. sp.

Belongs to the *streptocera* group; thorax uniformly fulvous yellow; wings pale brown, stigma darker, veins narrowly bordered by white; abdomen yellow, basal tergites with a continuous darkened stripe and sublateral basal markings; male hypopygium with the spine of the basistyle long and slender; inner dististyle massive, beak stout; basal lobe very large, subquadrate, provided with abundant long setae; eighth sternite with a small median setiferous lobule at base of the apical notch.

Male.—Length about 15 mm.; wing 15 mm.; antenna about 4.2 mm.

Frontal prolongation of head brownish black, subequal in length to remainder of head; nasus short but slender; palpi with proximal segment brown, remainder brownish black to black. Antennae with proximal three segments yellow, apex of first flagellar segment weakly darkened, remainder of antennae brownish black, bases of second and third flagellar segments vaguely brightened; segments conspicuously incised, subequal in length to the longest verticils. Head dark gray, vertex with a more infuscated central line.

Thorax light fulvous yellow, scutal lobes weakly infuscated; vestiture of notum sparse, longer on praescutal interspaces and posterolateral parts of the mediotergite. Halteres with stem dirty white, knob brownish black. Legs with coxae and trochanters fulvous; femora medium brown, bases restrictedly brightened, tips narrowly blackened, the amount subequal on all legs, preceded by a very vague yellowed ring; tibiae light brown, tips narrowly infuscated; tarsi brown, passing into darker brown; claws of male toothed. Wings with ground pale brown, stigma darker brown, cell *Sc* more yellowed; obliterative areas before and beyond stigma and across cell *1st M*₂; veins narrowly bordered by whitish, restricting the ground color to the centers of the cells; veins brown, prearcular veins, *Sc*, *R* and both branches of *Cu* more yellowish brown. Macrotrichia in outer wing cells from *R*₁ to *2nd M*₂ more sparse behind; trichia on longitudinal veins based almost to arculus, lacking on bases of *M* and *Cu*₁; strong trichia on prearcular sections of both Anal veins; dilated prearcular base of *R+M* with two isolated groups of small circular punctures. Venation: Petiole of cell *M*₁ longer than *m*; *m-cu* at fork of *M*₁+₂.

Abdominal tergites yellow, with a continuous brown central stripe and small basal sublateral brown areas, lateral borders pale; sternites and hypopygium yellow. Male hypopygium with tergal lobes small, blackened, cylindrical, tips obtuse, separated from one another by a narrow notch. Basistyle extended into a slender spine, slightly more dilated on less than the proximal half. Outer dististyle small, as in the subgenus; inner style distinctive, body massive, apex stout, not produced into a slender beak as is common in the group; outer crest of style with strong setae, the more posterior ones very long, erect; basal lobe very large, conspicuous, subquadrate, provided with abundant long setae. Eighth sternite narrowed posteriorly, apex with the usual two triangular lobes, the tips and mesal faces with dense yellow setae; at base of notch with a small tubercle that is tipped with a few strong setae, their apices more dilated and membranous.

Habitat.—California (San Luis Obispo County).

Holotype, ♂, San Simeon Creek, May 3, 1958 (Dennis Hynes).

The specific name, *chumash*, is that of a Californian Amerind stock, now extinct, belonging to the Hokan family, formerly occupying the present area of Santa Barbara and San Luis Obispo counties. The fly is readily told from all other described members of the *streptocera* group by the hypopygial structure, particularly the tergal lobes and inner dististyle.

The majority of the known species of *Hesperotipula* belong to the *streptocera* group, having the basistyle of the hypopygium produced into a strong spine. Other species without such a modification of the style are allied and may be placed in a second group, the *californica*, including besides the typical species, *californica* (Doane, 1908), also *aitkeniana* Alexander, *derbyi* Doane, *sanctae-luciae* Alexander and *sweetae* Alexander, all of California.

Pedicia (Tricyphona) hynesiana n. sp.

Belongs to the *rubiginosa* group; mesonotum buffy, praescutum with four poorly indicated more reddish brown stripes; antennae 17-segmented; wings fulvous, stigma brown, conspicuous; vein R_4+5 present; male hypopygium with the lateral tergal arms dilated into a triangular head, interbase small, slender.

Male.—Length about 9.5 mm.; wing 10 mm.; antenna about 1.4 mm.

Rostrum brownish gray, palpi brownish black; mouthparts large, pale brown. Antennae of male 17-segmented; scape dark brown, remaining segments yellowish brown to light brown; flagellar segments beyond the first oval, progressively smaller outwardly, slightly exceeding their verticils. Head gray; anterior vertex nearly twice the diameter of the scape.

Pronotum buffy yellow. Mesonotum buffy, praescutum with four very poorly indicated more reddish brown stripes, the intermediate pair indistinctly separated; scutal lobes light brown; pos-

terior sclerites and pleura more yellowish brown; dorsopleural membrane yellowed. Halteres with stem yellow, apex of knob brown. Legs with coxae brownish yellow; trochanters yellow; remainder of legs obscure yellow, proximal two tarsal segments yellow, tips narrowly blackened, outer segments black. Wings fulvous, cell *Sc* clearer yellow; stigma brown, conspicuous; veins yellow, macrotrichia dark brown. Macrotrichia of veins long and conspicuous, lacking on bases of *M*, *Cu*₁ and the Anals. Venation: $R_4 + s$ present, longer than the basal section of R_5 ; cell M_2 open by atrophy of *m*; *m-cu* oblique, shortly beyond midlength of $M_3 + 4$.

Abdomen medium brown, outer segments somewhat darker, sternites and hypopygium more yellowed. Male hypopygium with the tergite large, the posterior border almost truncate, vaguely emarginate at the midregion, the low lobes with long setae; apex of each tergal arm dilated into a large subtriangular head, shortly before tip produced laterad. Basistyle with outer apical angle extended into a strong lobe that narrows to a point, the lobe with few scattered setae; inner apical angle produced into a longer and larger lobe, its margin expanded into glabrous sclerotized flanges, one dorsal, the other ventral in position. Interbase a small slender rod. Dististyle lying in the notch of the lobes of the basistyle, shorter than either of the latter, appearing as a stout cylinder, the length about two and one-half times the diameter, outer end obtuse, with numerous blackened spinoid setae. Phallosome small and inconspicuous.

Habitat.—California (Monterey County).

Holotype, ♂, Salmon Creek, April 25, 1958 (Dennis Hynes).

I am very pleased to name this interesting fly in honor of the collector, Dr. Dennis Hynes, who is engaged in a study of the biology and ecology of the Tipulidae of the southern coast ranges of California. The fly is quite distinct from the two species of the group hitherto made known, *rubiginosa* Alexander, of the Canadian Rockies, and *fulvicolor* Alexander, known from British Columbia, Idaho and western Oregon. In the retention of the vein $R_4 + s$, the fly is more like *fulvicolor* from which it is readily distinguished by the smaller size and conspicuously darkened stigma. The male sex of *fulvicolor* is not known to me; the male hypopygium of *rubiginosa* is quite distinct, including especially the tergal arms, interbase, lobes of the basistyle, and the dististyle.

Gonomyia (Idiocera) flintiana n. sp.

General coloration of thorax light gray, the praescutum with four brown stripes, pleura extensively variegated with pale yellow; femora yellow, tips darkened; wings whitish subhyaline, restrictedly patterned with brown; cell R_1 at margin closed by the approximation or fusion of veins $R_1 + 2$ and R_3 *m-cu* about one and one-half times its length before the fork of *M*; male hypopygium with the aedeagus relatively short and stout, not constricted beyond the base.

Male.—Length about 5.5-6 mm.; wing 5-6 mm.

Female.—Length about 6.5 mm.; wing 6 mm.

Rostrum and palpi blackened. Antennae with basal segments yellowed, more darkened on lower surface, outer segments black; basal flagellar segments oval, the outer ones much smaller and proportionately longer, verticils slightly exceeding the segments. Anterior vertex yellowed, more strongly so behind, center of posterior vertex restrictedly darkened.

Pronotum dark gray, yellowed on sides; pretergites yellow. Mesonotal praescutum light gray with four narrow brown stripes, the intermediate pair widened behind, separated by a broad ground stripe; pseudosutural foveae castaneous, a small yellow humeral spot; scutum brownish gray, the central area and scutal lobes marked longitudinally with dark brown; scutellum dark brown; postnotum dark brownish gray, with a light yellow area over the postnotal suture. Pleura dark gray, variegated with light yellow, including the dorsopleural membrane, dorsal sternopleurite and metapleura. Halteres elongate, stem white, knob dark brown. Legs with fore coxae darkened, remainder broadly yellowed; trochanters yellow; femora yellow, tips brown to brownish black; tibiae brownish yellow, apices narrowly blackened; tarsi black. Wings whitish subhyaline, prearcular and costal fields light brown; a restricted but conspicuous brown pattern, including the stigma and narrow seams at origin of R_s , cord. $m-cu$ and outer medial fork; more than the outer half of cell R_4 paler brown; veins brown, pale in the yellowed fields. Venation: Sc short, Sc_1 ending about one-fifth to one-sixth the length of R_s ; cell R_1 closed by the approximation or short marginal fusion of $R_1 + 2$ and R_3 ; $m-cu$ from about one and one-fourth to one and one-half times its length before the fork of M .

Abdomen dark brown, including the hypopygium; posterior borders of tergites very narrowly pale. Male hypopygium with the apical lobe of basistyle narrowed and twisted outwardly. Dististyles blackened, subterminal; inner style with the spine apical, slightly recurved. Aedeagus relatively short and stout, its length about five times the diameter at base, not conspicuously narrowed beyond the base, as in *hoogstraali*.

Habitat.—Texas (Val Verde County).

Holotype, ♂, San Felipe Spring, Del Rio, September 21, 1960 (O. S. Flint). *Allotopotype*, ♀, pinned with the type. *Paratopotypes*, 2 ♂♂.

This interesting fly is named in honor of the collector, Dr. Oliver S. Flint, Jr., of the United States National Museum. The nearest described relative is *Gonomyia* (*Idiocera*) *hoogstraali* Alexander, of Michoacan, Mexico, which differs especially in hypopygial characters, particularly the inner dististyle and aedeagus. The most similar Nearctic species is *G. (I.) gaigei* Rogers, which differs more evidently in the pattern of the wings, venation, and in hypopygial structure.